

CLAIMS

What is claimed is:

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1. A signal light fixture for use on a vehicle, comprising:

a plurality of light-emitting diodes (LEDs) arranged to form an array divided into a first
section and a second section, wherein LEDs in the first section emit red light, and
wherein LEDs in the second section emit yellow light;

10 wherein a portion of the LEDs in the first section are illuminated to perform a rear tail light
function;

wherein all of the LEDs in the first section are illuminated to perform a brake light function;

wherein a portion of the LEDs in the second section are illuminated to perform a running
light function; and

15 wherein all of the LEDs in the second section are illuminated to perform a turn signal
function.

2. The signal light fixture as recited in claim 1, wherein the array has two sides, and wherein the first section is on one side of the array, and wherein the second section is on the other side of the array.
- 5 3. The signal light fixture as recited in claim 2, wherein the array has a right side and a left side, and wherein the first section is on the right side of the array, and wherein the second section is on the left side of the array.
4. The signal light fixture as recited in claim 1, wherein one third of the LEDs in the first section
10 are illuminated to perform the rear tail light function.
5. The signal light fixture as recited in claim 1, wherein one third of the LEDs in the second section are illuminated to perform the running light function.
- 15 6. The signal light fixture as recited in claim 1, wherein the portion of the LEDs in the first section illuminated to perform the rear tail light function are located in a central portion of the first section.
7. The signal light fixture as recited in claim 1, wherein the portion of the LEDs in the second section illuminated to perform the running light function are located in a central portion of the
20 second section.
8. The signal light fixture as recited in claim 1, wherein the LEDs in the first section emit light having wavelengths between about 620 nanometers and approximately 680 nanometers.

9. The signal light fixture as recited in claim 1, wherein the LEDs in the first section emit light having wavelengths of about 633 nanometers.

5 10. The signal light fixture as recited in claim 1, wherein the LEDs in the second section emit light having wavelengths between about 540 nanometers and approximately 600 nanometers.

11. The signal light fixture as recited in claim 1, wherein the LEDs in the second section emit light having wavelengths of about 595 nanometers.

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12. The signal light fixture as recited in claim 1, further comprising a lens substantially transparent to visible light having wavelengths between about 540 nanometers and approximately 680 nanometers.

15 13. The signal light fixture as recited in claim 1, wherein all the LEDs of the signal light fixture are mounted on a single printed circuit board.

14. The signal light fixture as recited in claim 1, wherein the signal light fixture is configured to operate at two different electrical voltages.

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15. The signal light fixture as recited in claim 14, wherein the signal light fixture is configured to operate at 36 volts direct current and 28 volts direct current.

16. The signal light fixture as recited in claim 1, further comprising a circuit for illuminating the portion of the LEDs in the first section, wherein the circuit comprises:

a pair of terminals;

a zener diode and a diode array coupled between the pair of terminals and configured to

5 produce an electrical voltage for illuminating the portion of the LEDs in the first section;

wherein two different electrical voltages applied between the pair of terminals cause the

zener diode and the diode array to produce substantially the same electrical voltage

for illuminating the portion of the LEDs in the first section.

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17. The signal light fixture as recited in claim 16, wherein one of the two different electrical voltages applied between the pair of terminals reverse biases the zener diode and causes a zener voltage to be developed across the zener diode.

15 18. The signal light fixture as recited in claim 17, wherein the other electrical voltage applied between the pair of terminals forward biases the zener diode and causes a diode voltage to be developed across the zener diode, wherein the diode voltage is less than the zener voltage.

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